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TITLE: Multimode digital modem

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Detailed Description Text - DETX (586):

Translation can be accomplished by making use of the aliased images produced by digitally upsampling to a higher rate. Upsampling by two to 800 KHz consists of inserting a zero valued sample between the computed output samples. This generates images at harmonics of the original 400 KHz sampling Frequency. Even the new modified output data stream is passed to a DAC, the analog output spectrum shown in FIG. 13f is generated. (The since roll-off characteristic imparted by the conversion process has been left out of the figure). By the use of an appropriate analog bandpass filter, the inverted image centered at 300 KHz can be selected. Since the inserted values are zero, they need not be computed by the DSP. The inversion can be either corrected by multiplication of odd samples by (-1) or disregarded completely, since the spectrum is inverted again by the decimation process at the RU modem. As show in FIG. 13g, the zero sample interleaving process can be implemented by simple external logic outside the DSP.